Multi soliton generation for enhance optical communication

Abstract:

We propose a new optical system that can be used to form the multi-soliton pulses within the micro-ring resonators. The system consists of two micro-ring resonators and an add/drop multiplexer that can be integrated into a single system. The large bandwidth signal is generated by using a soliton pulse propagating in a Kerr-type nonlinear medium. The tuned soliton pulses in either spatial or temporal modes are obtained by using the add/drop multiplexer. Results show the generation of multi-soliton pulses within the micro-ring resonator can be achieved for long distance communication. This results in an increase in the number of channels and spaces with a large freespectrum range (FSR) of 650 pm for dense wavelength division mul tiplexing (DWDM).